

LAYING THE GROUNDWORK FOR EMS

Laying the Groundwork area includes 1 of the 18 modules.

- **Module 1: Laying the Groundwork & Obtaining Top Management Commitment**

MODULE 1: LAYING THE GROUNDWORK & OBTAINING TOP MANAGEMENT COMMITMENT



GUIDANCE

Why Your Organization Should Have an EMS

An EMS is a continual cycle of **planning, implementing, reviewing, and improving** the processes and actions that an organization undertakes to meet its environmental obligations.

Does your organization need an EMS? Well, ask yourself the following questions:

- Is your organization required to comply with **environmental laws and regulations**?
- Are you looking for ways to improve your **environmental performance**?
- Is the state of your organization's environmental affairs a significant **liability**?
- Does a **lack of time or resources** prevent your organization from managing its environmental obligations effectively?
- Is the relationship between your organization's **environmental goals** and other goals unclear?

If you answered YES to one or more of the above questions, an EMS can help your organization — and so will this Guide!

As one of your organization's leaders, you probably know that interest in environmental protection and sustainable development is growing each year. You might hear about these issues from customers, the public, or others. Like many, your organization may be increasingly challenged to demonstrate its commitment to the environment. Implementing an EMS can help you **meet this challenge** in several important ways.

Frequently Asked Questions about EMS

1. We already have a compliance program – why do we need an EMS?

An EMS can help you to comply with regulations more consistently and effectively. It also can help you identify and capitalize on environmental and business opportunities that go beyond compliance.

2. How big does an organization need to be to successfully implement an EMS?

EMS have been implemented by organizations ranging in size from a couple of dozen employees to many thousands of employees. The elements of an EMS (as described in this Guide) are flexible by design to accommodate a wide range of organizational types and sizes.

3. Will an EMS help us to prevent pollution?

A commitment to preventing pollution is a cornerstone of an effective EMS and should be reflected in an organization's policy, objectives, and other EMS elements. Examples throughout this Guide show how organizations have used an EMS to prevent pollution.

4. To implement an EMS, do we have to start from scratch?

Much of what you have in place now for environmental management probably can be incorporated into the EMS. There is no need to "start over".

5. How will an EMS affect my existing compliance obligations?

An EMS will not result in more or less stringent legal compliance obligations. But an EMS should improve your efforts to comply with legal obligations, and, in some cases, may lead to more flexible compliance requirements. (See discussion of Performance Track in **Appendix A.**)

6. Do we need to be in 100% compliance in order to have an EMS?

No. The concept of continual improvement assumes that no organization is perfect. While an EMS should help your organization to improve compliance and other measures of performance, this does not mean that problems will never occur. However, an effective EMS should help you find and fix these problems and prevent their recurrence.

EMS Costs and Benefits

POTENTIAL COSTS	POTENTIAL BENEFITS
<p><u>Internal</u></p> <ul style="list-style-type: none">• Staff (manager) time• Other employee time <p>(Note: Internal labor costs represent the bulk of the EMS resources expended by most organizations)</p> <p><u>External</u></p> <ul style="list-style-type: none">• Potential consulting assistance• Outside training of personnel	<ul style="list-style-type: none">• Improved environmental performance• Enhanced compliance• Prevention of pollution/resource conservation• New customers/markets• Increased efficiency/reduced costs• Enhanced employee morale• Enhanced image with public, regulators, lenders, investors• Employee awareness of environmental issues and responsibilities

A few **hints** to keep in mind as you build your EMS:

- Help is available — don't hesitate to use it (see **Appendix B** for sources for assistance).
- Pace yourself. Move quickly enough that employees stay interested and engaged, but not so fast that those involved are overloaded or that the effort becomes superficial.
- Don't re-invent the wheel -- existing management practices should help you to meet many EMS requirements.
- Consultants can help you evaluate your EMS and suggest approaches used successfully elsewhere. Explore ways to hold consulting costs down. You may be able to join forces with other organizations to hire a consultant or sponsor a training course.

Some Thoughts on Using Consultants

- Assess your own in-house resources first.
- Ensure both parties understand the scope of work.
- Get references and check them. Look for consultants with experience in small organizations and your specific industry.
- Use consultants to gain insights on approaches used by other organizations.
- An EMS developed by consultants "in isolation" will not work. Your own people need to be involved in the EMS development process.

Integration of Quality Management System (QMS) and EMS

If your organization already has or is considering a quality management system (based on ISO 9001, for example), you will find significant synergy between what you need for **quality** management and for **environmental** management (see below).

Some Common Aspects of Quality and Environmental Management Systems

<u>QMS</u>	<u>EMS</u>
<ul style="list-style-type: none">• Quality Policy• Adequate Resources• Responsibilities and Authorities• Training• System Documentation• Process Controls• Document Control• System Audits• Management Review	<ul style="list-style-type: none">• Environmental Policy• Adequate Resources• Responsibilities and Authorities• Training• System Documentation• Operational Controls• Document Control• System Audits• Management Review

Detail on the integration of the management systems into the EMS can be found in Appendix C.

Aspects of Health & Safety Policy in EMS

Health and Safety Policy plays a significant role in EMS because it partly reflects how your company currently handles environmental and human health. Detailed questionnaire on integration of H&S policy into your EMS can be found in Appendix D.

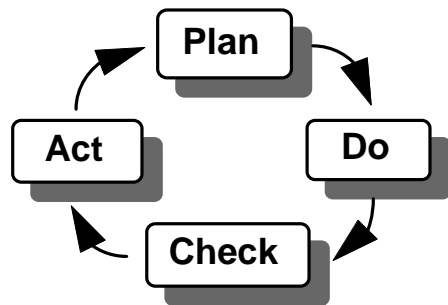
Key EMS Concepts

You have probably heard of **Total Quality Management** (TQM). Your organization may apply TQM principles to some of its operations and activities.

An effective EMS is built on TQM concepts. To improve environmental management, your organization needs to focus not only on **what** things happen but also on **why** they happen. Over time, the systematic identification and correction of system deficiencies leads to better environmental (and overall organizational) performance.

Most EMS models (including the ISO 14001 standard, which is described later) are built on the “Plan, Do, Check, Act” model introduced by Shewart and Deming. This model endorses the concept of **continual improvement**.

**Figure 1-1: “Plan, Do, Check, Act”
Model**



Some of the **keys** to a successful EMS include:

Top Management Commitment

Applying TQM principles to the environmental area and providing adequate resources are the job of **top management**. To initiate and sustain the EMS effort, top management must communicate to all employees the importance of:

- ***making the environment an organizational priority***
(thinking of effective environmental management as fundamental to the organization's survival)
- ***integrating environmental management throughout the organization***
(thinking about the environment as part of product/service and process development and delivery, among other activities)
- ***looking at problems as opportunities***
(identifying problems, determining root causes, and preventing problem recurrence)

Focus on Continual Improvement

No organization is perfect. The concept of continual improvement recognizes that problems will occur. A committed organization **learns from its mistakes** and **prevents** similar problems from recurring.

Flexibility

An effective EMS must be **dynamic** to allow your organization to adapt to a quickly changing environment. For this reason, you should keep your EMS flexible and simple. This also helps make your EMS **understandable for the people who must implement it** — your organization's managers and other employees.

Compatibility with Organizational Culture

The EMS approach and an organization's culture should be compatible. For some organizations, this involves a choice: (1) tailoring the EMS to the culture, or (2) changing the culture to be compatible with the EMS approach. Bear in mind that changing an organization's culture can be a long-term process. Keeping this compatibility issue in mind will help you ensure that the EMS meets your organization's needs.

Employee Awareness and Involvement

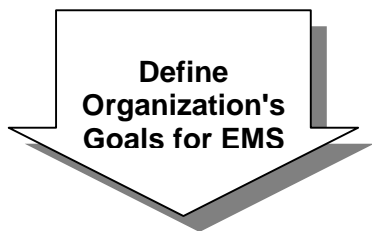
As you design and implement an EMS, roadblocks may be encountered. Some people may view an EMS as bureaucracy or extra expense. There also may be resistance to change or fear of new responsibilities. To overcome potential roadblocks, make sure that everyone understands why

the organization needs an effective EMS, what their role is, and how an EMS will help to control environmental impacts in a cost-effective manner. Employee involvement helps to demonstrate the organization's commitment to the environment and helps to ensure that the EMS is realistic and practical and adds value.

Building or improving an EMS (with the help of this Guide) provides an opportunity to assess how your organization manages environmental obligations and to find better (and more cost-effective) solutions. While you will probably identify some areas where your current EMS can be improved, this does not mean that you should change things that are working well! By reviewing what your organization does and how well it works, you can ensure that your EMS will be viable and effective, both now and in the future.

Don't get discouraged if your system has some bugs at first — the focus is on continual improvement!

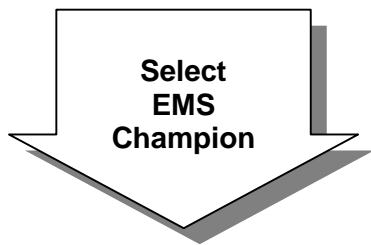
Laying the Groundwork for an EMS: Key Steps



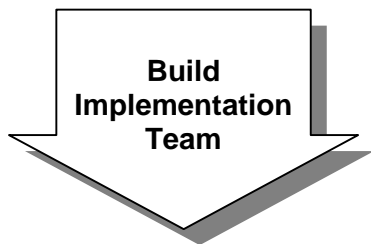
A first step in EMS planning is to **decide why you are pursuing the development of an EMS**. Are you trying to improve your environmental performance (for example, complying with regulations or preventing pollution)? Are you trying to promote involvement throughout the organization? Write your goals down and refer back to them frequently as you move forward. As you design and implement the EMS, ask: How is this task going to help us achieve our goals? This also is a good time to define the **project scope** or **"fenceline"** (i.e., what is the "organization" that the EMS will cover? One location? Multiple locations? Should we "pilot" the EMS at one location then implement the system at other locations later?).



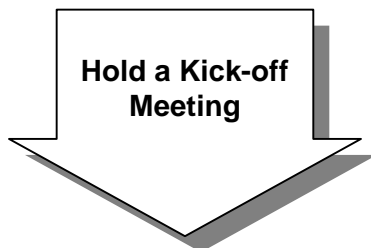
One of the most critical steps in the planning process is **gaining top management's commitment** to support EMS development and implementation. Management must first understand the benefits of an EMS and what it will take to put an EMS in place. Explain the strengths and limitations of your current approach and how those limitations can affect the organization's financial and business performance. Management also has a role in ensuring that the **goals** for the EMS (see above) are clear and consistent with other organizational goals. Management's commitment should be communicated across the organization.



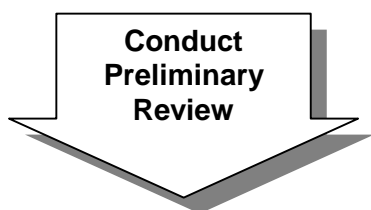
Not all small- or medium-sized organizations have the luxury of choosing among multiple candidates, but your choice of **project champion** is critical. The champion should have the necessary authority, an understanding of the organization, and project management skills. The champion should be a “systems thinker” (ISO 9000 experience can be a plus, but is not necessary), should have the time to commit to the EMS-building process and must have top management support.



A **team** with representatives from key management functions (such as engineering, finance, human resources, production and/or service) can identify and assess issues, opportunities, and existing processes. Consider including contractors, suppliers or other external parties as part of the project team, where appropriate. The team will need to meet regularly, especially in the early stages of the project. A cross-functional team can help to ensure that procedures are practical and effective and can build commitment to and “ownership” of the EMS.



Once the team has been selected, **hold a kick-off meeting** to discuss the organization’s objectives in implementing an EMS, the steps that need to be taken initially, and the roles of team members, among other topics. If possible, get top management to describe its commitment to the EMS at this meeting. The kick-off meeting also is a good opportunity to provide some EMS training for team members. Followup this meeting with a communication to all employees.



The next step is for the team to conduct a **preliminary review** of your current compliance and other environmental programs/systems and to compare these against the criteria for your EMS (such as ISO 14001). Evaluate your organization’s structure, procedures, policies, environmental impacts, training programs and other factors. Determine which parts of your current EMS are in good shape and which need additional work. See the “NSF ISO 14001 Self-Assessment Tool” (www.nsf-isr.org) or “Incorporating Design for the Environment into Your Gap Analysis” (www.epa.gov/dfe) for gap analysis tools.



**Prepare
Budget and
Schedule**

Based on the results of the preliminary review, prepare a **project plan and budget**. The plan should describe in detail what key actions are needed, who will be responsible, what resources are needed, and when the work will be completed. Keep the plan flexible, but set some stretch goals. Think about how you will maintain project focus and momentum over time. Look for potential “early successes” that can help to build momentum and reinforce the benefits of the EMS.



**Secure
Resources,
Assistance**

The plan and budget should be reviewed and **approved by top management**. In some cases, there may be **outside funding or other types of assistance** that you can use (from a trade association, a state technical assistance office, etc.). See Appendix F for more ideas on possible sources of help.



**Involve
Employees**

Employees are a great source of knowledge on environmental and health & safety issues related to their work areas as well as on the effectiveness of current processes and procedures. They can help the project team in drafting procedures. **Ownership** of the EMS will be greatly enhanced by meaningful employee involvement in the EMS development process.



**Monitor and
Communicate
Progress**

As you build the EMS, be sure to regularly **monitor your progress** against the project plan and **communicate** this progress within the organization. Be sure to communicate the **accomplishments** that have been made and describe what happens next. Build on small successes. Be sure to keep top management informed and engaged, especially if additional resources might be required.

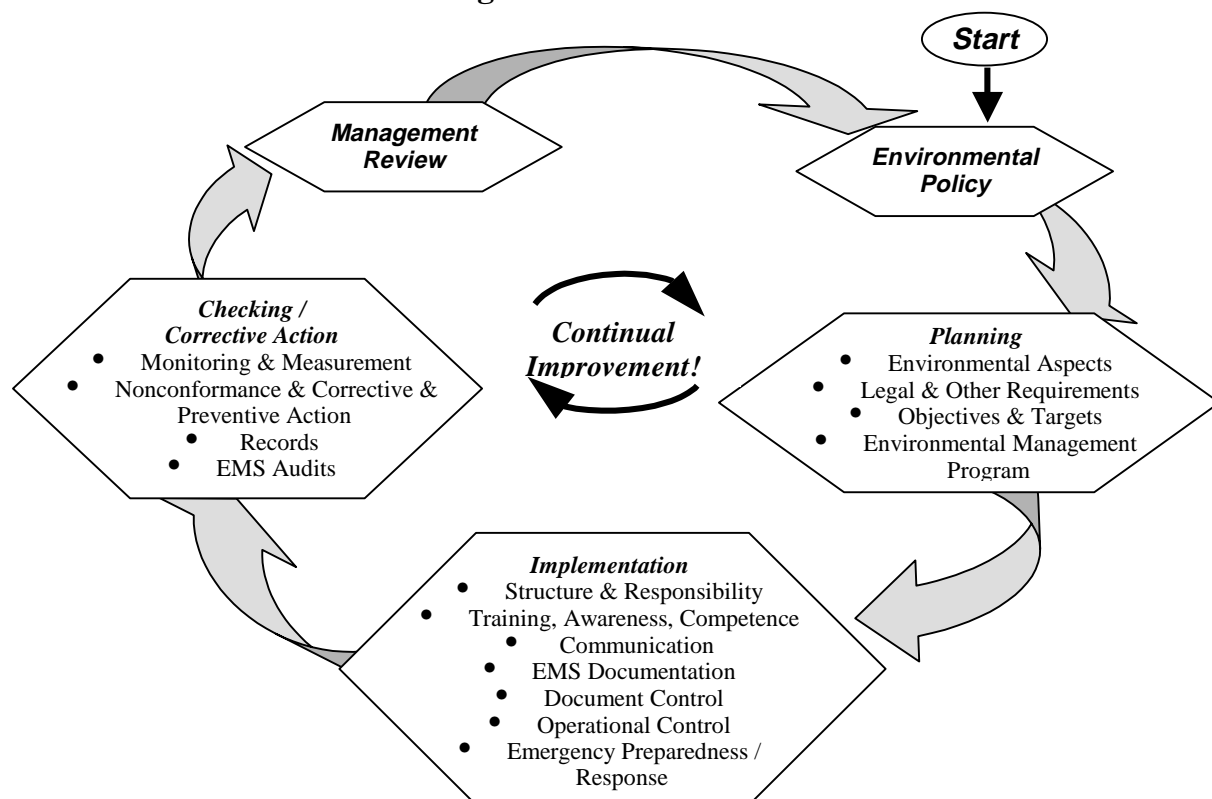
Key Elements of an EMS

As mentioned earlier, your EMS should be built on the “Plan, Do, Check, Act” model to ensure that environmental matters are systematically **identified, controlled, and monitored**. Using this approach will help to ensure that performance of your EMS **improves** over time and that you meet your goals for implementing an EMS in the first place.

This section describes seventeen EMS elements that are common to most EMS models (Figure 1-2). This section also notes the **key linkages** among these elements. While there are several good EMS models available, this Guide generally uses the ISO 14001 Standard as a starting point for describing EMS elements. This has been done for several reasons:

- ISO 14001 is a widely accepted international standard for EMS that focuses on continual improvement;
- Companies may be asked to demonstrate conformance with ISO 14001 as a condition of doing business in some markets; and
- The Standard is consistent with the key elements found in many EMS models, including the European Union’s Eco-Management and Audit Scheme, EPA’s Performance Track and the Code of Environmental Management Principles for Federal Agencies, among others.

Figure 1-2: EMS Model



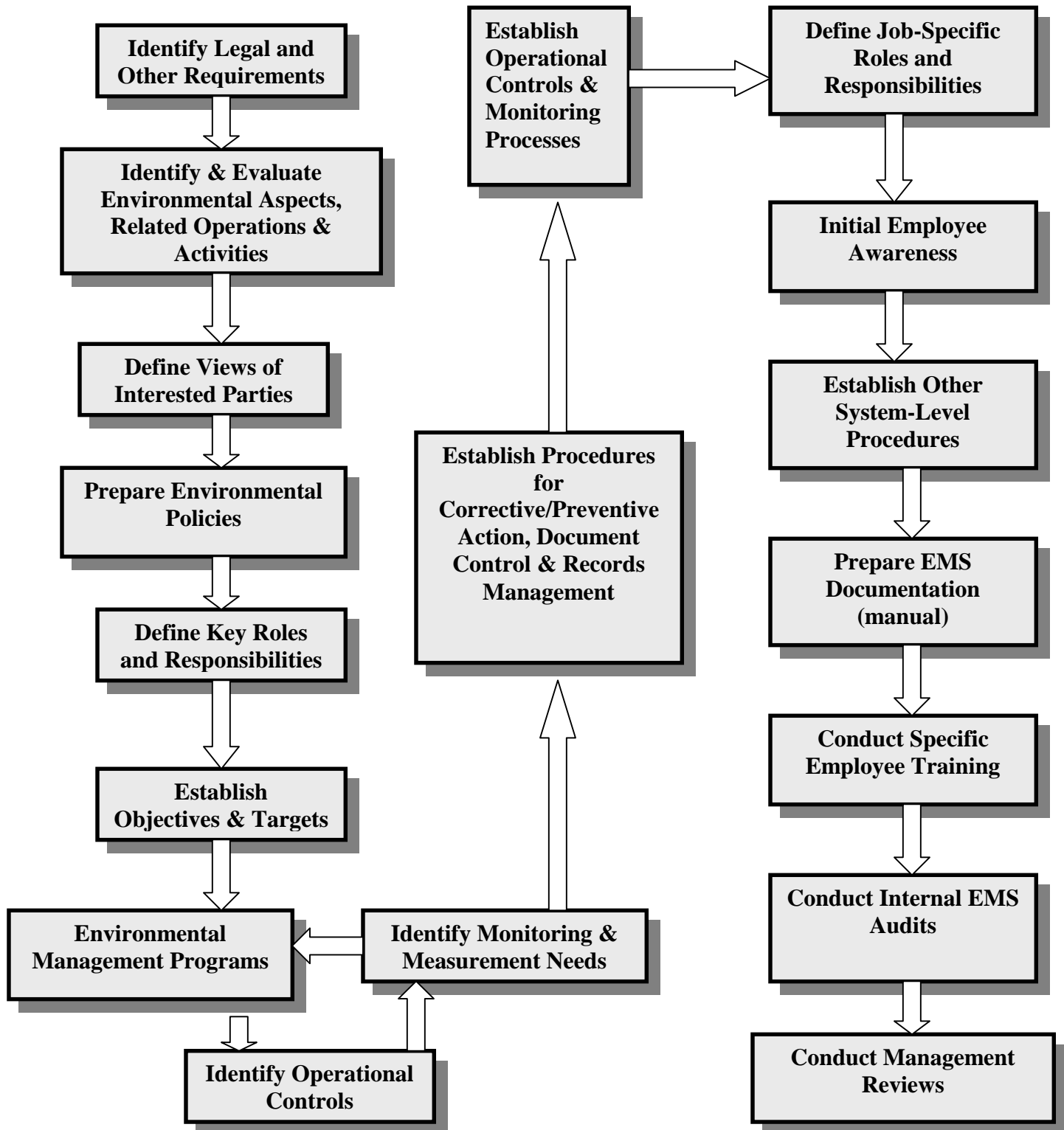
Key Elements of an EMS: A Snapshot

- **Environmental policy** — Develop a statement of your organization's commitment to the environment. Use this policy as a framework for planning and action.
- **Environmental aspects** — Identify environmental attributes of your products, activities and services. Determine those that could have significant impacts on the environment.
- **Legal and other requirements** — Identify and ensure access to relevant laws and regulations, as well as other requirements to which your organization adheres.
- **Objectives and targets** — Establish environmental goals for your organization, in line with your policy, environmental impacts, the views of interested parties and other factors.
- **Environmental management program** — Plan actions necessary to achieve your objectives and targets.
- **Structure and responsibility** — Establish roles and responsibilities for environmental management and provide appropriate resources.
- **Training, awareness and competence** — Ensure that your employees are trained and capable of carrying out their environmental responsibilities.
- **Communication** — Establish processes for internal and external communications on environmental management issues.
- **EMS documentation** — Maintain information on your EMS and related documents.
- **Document control** — Ensure effective management of procedures and other system documents.
- **Operational control** — Identify, plan and manage your operations and activities in line with your policy, objectives and targets.
- **Emergency preparedness and response** — Identify potential emergencies and develop procedures for preventing and responding to them.
- **Monitoring and measurement** — Monitor key activities and track performance. Conduct periodic assessments of compliance with legal requirements.
- **Nonconformance and corrective and preventive action** — Identify and correct problems and prevent their recurrence.
- **Records** — Maintain and manage records of EMS performance.
- **EMS audit** — Periodically verify that your EMS is operating as intended.
- **Management review** — Periodically review your EMS with an eye to continual improvement.

Roadmap for EMS Development

Figure 1-3 illustrates the suggested process flow to plan, develop, and implement an effective an EMS.

Figure 1-3: EMS Implementation Process Flow



EMS Planning – Gap Analysis

One important component of laying the groundwork for EMS is conducting an initial review or "gap analysis" to evaluate your current program and specific needs. Although the gap analysis is very important, it can be counter-productive for an organization to focus narrowly on what it is not doing. It is also important to understand what it is already doing, and evaluate ways to improve and build on existing programs and activities. Some organization may find that they are already performing many of the suggested activities. This is good; there is no need to rebuild a program from scratch. Looking outside the environmental arena can provide inspiration. Organizations may be tempted to say "Yes, we do that, but it's not environmental, it's part of our quality (or some other) system." If it already helps manage important organization activities, it can probably help environmental management as well.



Internet Help

Visit the DfE website for more tools related to gaps analysis: www.epa.gov/dfe

Building on existing programs becomes even more important when organizations are faced with diminishing resources and being asked to "do more with less." Through careful analysis, organizations will probably find ways to address the principles at little or no cost. For example, developing a policy statement on environmental protection does not require large investments in personnel or equipment, yet it can carry organization-wide visibility and impact. Ultimately, organizations that are able to invest in the implementation of the principles are likely to realize a high return on that investment through an improved "risk profile" at their facilities, resulting in a lowering of costs associated with regulatory compliance, health and safety, incident response, and cleanup of contaminated sites. Non-monetary benefits, such as improved public opinion and employee satisfaction, can also be achieved.

Detail on the gap-analysis matrix can be found in the Gap Analysis Tool in Appendix E.

A gap analysis is designed to answer the following questions:

- How well are the organization and its environmental programs performing?
- What standards of environmental performance does the organization hope to achieve?
- What are the gaps between objectives and performance?
- What existing programs and activities can serve as the best foundation for improved environmental performance?



TOOLS

Planning of EMS

To effectively implement your EMS, you will need to set up a plan for getting the work done. This plan will be unique to your company. You will identify the steps to take, in the appropriate order; the decisions that will need to be made; and the resources and schedules for accomplishing the tasks. Start out by considering the following points as you plan for your EMS development:

- Determine what level of management involvement is required and what decisions will be needed from both middle and senior management.
- Set a deadline for developing your EMS and establish a schedule. (See worksheet at the end of this module.)
- Estimate a budget.
- Determine how you will document your EMS.

If you have never developed an EMS before, estimating resources and time can be difficult. You will need to create a schedule and estimate resources for completing your EMS. As you begin to work on each module, you may want to identify intermediate steps for which you will set target completion dates. At some points, you may need to alter the overall schedule. Tool 1-1 will assist you in developing and tracking performance relative to this plan. As you go through each module, revisit this worksheet and list who is participating in each task and your estimated budget and schedule. Also, Tool 1-2 will help you identify and document the persons responsible for different parts of the EMS and the resources needed to support their efforts. You may not be able to completely fill out these budget and resource worksheets at the beginning of this process. In addition, the items in the worksheet blocks may change as you work your way through the EMS process. These worksheets only present ideas to get you started.

Tool 1-1: Sample Worksheet for EMS Development Schedule and Resources

Module	Participants	Budget	Target Completion
Making the Commitment: Creating a Policy Statement and Determining the Scope			
Intermediate steps: (As appropriate)			
Planning the Process: Decision Points, Leadership & Participants, Schedule & Plan			
Intermediate steps: (As appropriate)			
Determining Significant Aspects: Prioritizing Concerns and Setting Objectives			
Intermediate steps: (As appropriate)			
Developing Operational Controls			

General Environmental Management System (EMS) Template
Rev. 1.0 (April 2001)

Module	Participants	Budget	Target Completion
Intermediate steps: (As appropriate)			
Making Improvements: Evaluating Alternatives and Setting Targets			
Intermediate steps: (As appropriate)			
Implementation: Building Organizational Support for Your IEMS			
Intermediate steps: (As appropriate)			
Setting Up Environmental Management Projects; Measuring and Achieving Success			
Intermediate steps: (As appropriate)			
Establishing Continuing Improvement			

General Environmental Management System (EMS) Template
Rev. 1.0 (April 2001)

Module	Participants	Budget	Target Completion
Intermediate steps: (As appropriate)			
Contact Person:	Date Completed:		

Tool 1-2: Sample Worksheet for Persons Responsible for EMS Development

Roles	Individual(s) Responsible	% of Time Designated	Budget
“Management representative” having responsibility for implementing the EMS (in small businesses, this could be the owner).			
EMS Coordinator			
EMS Team Participants			
Identifying and determining significance of environmental aspects.			
Identifying and determining applicability of legal and other requirements.			
Competency-based training.			
Operational controls.			
Emergency preparedness and response.			
Monitoring and measurement of “key characteristics” of operations and activities that can have significant environmental impacts (i.e., the “significant environmental aspects.”).			
Periodic evaluations of environmental compliance.			
Handling and investigating non-conformance with the EMS.			
Records management.			
Internal EMS audits.			
Contact Person:	Date Completed:		

Note: Most of these blocks will be filled in as development of the EMS progresses. This worksheet will help track progress and serve to remind the team and management of necessary assignments.